

Application No.: 09/757,721
Filing Date: January 10, 2001
Page: 6

REMARKS

Claims 1 through 21 and new Claim 22 are pending in the application.

Claim 1 has been amended to further emphasize that the inventive films are flame-retardant. In particular, Claim 1 has been amended to reflect that inventive films having a thickness between 5 to 300 μm meets the requirements of UL 94 VTM-0. Support for this amendment can be found in the Application-as-filed, for example on Page 8, 3rd full paragraph in its entirety.

Claim 1 has further been amended to emphasize that the recited flame retardancy is imparted entirely by flame retardant consisting of one or more organic phosphorous compounds. Support for this amendment can be found in the Application-as-filed, for example on Page 5, 4th full paragraph in its entirety, as well as *Berenter v. Qulgg*, 14 USPQ2d 1175 (DDC 1988)(holding that "an applicant can leave the claim open with respect to additional elements, but can close the claim with respect to a particular element.")

Claim 1 has also been amended to emphasize that the thermoplastic compositions used to form particularly advantageous inventive films are formed entirely from polyethylene terephthalate and/or polybutylene terephthalate, i.e. the claimed films are formed from a single thermoplastic composition consisting of polyethylene terephthalate and/or polybutylene terephthalate. Support for this amendment can be found in the Application-as-filed, as well.

Claims 1, 18, 19 and 20 have been amended to remove extraneous process limitations expressly noted by the Examiner to be non-limiting in relation to the claimed products.

Application No.: 09/757,721
Filing Date: January 10, 2001
Page: 7

Claim 2 has been amended to conform to amended Claim 1.

Claim 3 has been canceled to conform to amended Claim 1.

Claim 4 has been canceled, as its subject matter has been incorporated into Claim 1.

Claim 22 has been added to complete the record for examination and highlight advantageous embodiments of the invention.

Claim 22 is directed to multi-layered film having a base layer disposed between two outer layers. The film includes flame retardant and hydrolysis stabilizer in the base layer alone. The recited films comply with the conditions of UL 94 for flame retardance. Support for Claim 22 can be found in the Application-as-filed, for example on Page 15, line 1 through Page 16, line 17 (Example 2).

Reexamination and reconsideration of this application, withdrawal of all rejections, and formal notification of the allowability of the pending claims are earnestly solicited in light of the remarks which follow.

The Claimed Invention is Patentable in Light of the Art of Record

Claims 1 through 4, 6 through 12 and 14 through 21 stand rejected over United States Patent No. 5, 955, 181 to Peiffer et al. (US 181) in view of United States Patent No. 5,936,048 to Oishi et al. (US 048) and United States Patent No. 5,804,626 to Rogers et al. (US 626). Claims 5 and 13 stand rejected over the foregoing primary and secondary references and further in view of DE 19630599 to Murschall (DE 599).

Application No.: 09/757,721
Filing Date: January 10, 2001
Page: 8

It may be useful to consider the claims as amended before addressing the merits of the rejection. The claims are directed to transparent, flame retardant biaxially oriented films formed from a single thermoplastic composition consisting of at least one of either polyethylene terephthalate or polybutylene terephthalate. The claimed films include one or more flame retardant(s). In the advantageous embodiments reflected in Claim 1 as-amended, the recited flame retardancy is imparted entirely by flame retardant consisting of one or more organic phosphorous compounds, and the resulting film meets the requirements of UL 94 VTM-0.

In further advantageous embodiments, the films of the invention include a base layer disposed between two outer layers. In such embodiments, flame retardant and hydrolysis stabilizer can be incorporated into the base layer alone. Films in accordance with this advantageous embodiment also comply with the conditions of UL 94, as recited in Claim 22.

Applicants respectfully reiterate that the cited references do not teach or suggest the claimed invention.

US 181 is directed to heat-sealable packaging films having a reduced tendency to stick during production and further processing. (Col. 1, lines 18 through 24 and Col. 2, lines 50 - 56). US 181 discloses the incorporation of ethylene 2,6-naphthalate ("EN") into the heat-seal layer of packaging films to improve the sticking properties of the resulting films. (Col. 3, lines 29 - 32 and lines 45 - 50 and Col. 5, lines 11 - 13). US 181 thus requires the presence of up to 95 wt % EN within its films. (Col. 5, lines 10 - 17). US 181 generically notes that any of the film layers may further contain "conventional additives." US 181 then goes on to broadly describe the additives as being present in "the usual amounts." (Col. 6, lines 49 - 54). In addition to heat sealability, US 181 further notes that its films may be easily embossed, i.e. the films of US 181 readily soften, upon exposure to temperatures above 90 °C. (Col. 8, lines 39 - 42).

Application No.: 09/757,721
Filing Date: January 10, 2001
Page: 9

US 181, requiring the presence of EN, does not teach or suggest the advantageous films of the invention, formed from a single thermoplastic composition consisting of at least one of either polyethylene terephthalate or polybutylene terephthalate. Applicants respectfully reiterate that US 181, considered in its entirety, instead strongly teaches away from such films by requiring the incorporation of EN within its films. In fact, to modify US 181 so as to avoid the inclusion of EN would clearly render the resulting films unfit for their intended purpose. MPEP 2143.01 (citing *In re Gordon*, 221 USPQ 1125 (Fed. Cir. 1984)).

US 181 further does not teach or suggest the flame-retardant films, much less the recited 5 to 300 μm flame retardant films in which flame retardancy is imparted entirely by flame retardant consisting of one or more organic phosphorous compounds and the film further meets the requirements of UL 94 VTM-0.

As US 048 does not teach or suggest flame retardant films, it most certainly does not teach or suggest such films having a multi-layered construction that includes flame retardant and hydrolysis stabilizer in the base layer alone and that further complies with the conditions of UL 94 as recited in Claim 22.

Accordingly, Applicants respectfully submit that Claims 1, 2 and 5 through 22 are patentable in light of US 181, considered either alone or in combination with the remaining art of record.

In contrast to the claimed biaxially oriented films, US 048 is directed to resins used to form durable items, electrical materials and the like. (Col. 1, lines 20 – 26). Exemplary articles formed from the resins of US 048 include bathtubs, toilets, car bumpers and the like. (Col. 20, lines 31 – 38). In fact, US 048 provides a laundry list of suitable applications. (Col. 20, lines 38 – 56). Films are noticeably absent from the list, however.

Application No.: 09/757,721

Filing Date: January 10, 2001

Page: 10

Applicants respectfully reiterate that US 048 is directed to norbornenyl-modified flame retardant polymers. (Col. 4, lines 40 – 45; Col. 7, lines 60 – 66 and Col. 9, line 66 – Col. 10, line 3 and Col. 9, lines 37 – 49). US 048 expressly describes its modified resins as “quite different” from “known” compounds. (Col. 2, lines 49 – 50). The modified flame retardant resins may further be reacted with an epoxide. (Col. 3, lines 15 – 20).

US 048 expressly notes that the flame retardance provided by phosphorus containing compounds is “insufficient” if the compounds are used alone. (Col. 3, lines 49 – 50). US 048 then goes on to state that “known” flame retarding methods, i.e. methods that do not incorporate its norbornenyl-modified resins, are “insufficient and impractical.” (Col. 4, lines 31 – 32). Hence US 048 clearly indicates that articles including conventional flame retardants would not provide sufficient levels of flame retardancy. Further, US 048’s working examples teach that a mixture of flame retardants, including US 048’s particular norbornenyl-based flame retardant resin is required for the resulting articles to satisfy the UL 94 flame retardance standard. (Col. 52, lines 49 – 51 and Col. 38, lines 45 – 50 and Col. 53, lines 1 – 25, Table 3).

Applicants respectfully reiterate that US 048 does not teach or suggest the recited biaxially oriented flame retardant films, and particularly not such films whose low-flammability properties are imparted entirely by flame retardants consisting of one or more organic phosphorous compounds. In fact, US 048, considered in its entirety, strongly teaches away from such films by requiring norbornenyl-modified flame retardant resin. Furthermore, Applicants likewise respectfully submit that to form articles excluding the required norbornenyl-modified flame retardant would render US 048 unfit for its intended purpose.

And US 048, clearly indicating that its norbornenyl-modified flame retardant polymer must be present to impart adequate flame retardancy to molded articles, likewise teaches away from the recited flame-retardant film incorporating flame retardants

Application No.: 09/757,721
Filing Date: January 10, 2001
Page: 11

consisting of one or more organic phosphorous compounds, in which film having a thickness of between 5 and 300 μm further meets the requirements of UL 94 VTM-0.

US 048, altogether silent as to biaxially oriented films, most certainly does not teach or suggest such films having a multi-layered construction that include flame retardant and hydrolysis stabilizer in the base layer alone and that further complies with the conditions of UL 94 as recited in Claim 22.

Applicants thus respectfully submit that the claimed invention is patentable in light of US 048, considered either alone or in combination with the art of record.

US 626 is generally directed to improved monofilament for paper machine cloth. (Col. 7, lines 43 – 54). US 626 is more particularly directed to polyethylene naphthalate compositions having improved hydrolytic stability that are used to form such monofilament. (Col. 2, lines 53 – 56). In contrast to the recited flame retardant films, US 626 expressly notes that its compositions suffer from “reduced heat resistance.” (Col. 7, lines 3 – 4).

US 626, requiring the presence of polyethylene naphthalate, does not teach or suggest the recited films formed from a single thermoplastic composition consisting of at least one of either polyethylene terephthalate or polybutylene terephthalate. US 626 instead teaches away from such films. As is the case with the primary reference, to modify US 626 so as to avoid the inclusion of EN would clearly render the resulting articles unfit for their intended purpose.

And US 626, primarily directed to monofilament, most certainly does not teach or suggest the recited biaxially oriented flame-retardant film having a thickness between 5 to 300 μm that further meets the requirements of UL 94 VTM-0.

Application No.: 09/757,721
Filing Date: January 10, 2001
Page: 12

US 626 likewise does not teach or suggest such films having a multi-layered construction that includes flame retardant and hydrolysis stabilizer in the base layer alone and that further complies with the conditions of UL 94 as recited in Claim 22.

Applicants thus respectfully submit that the claimed invention is patentable in light of US 626, considered either alone or in combination with the art of record.

Applicants respectfully reiterate that there would have been no motivation to have combined these references. Applicants further respectfully submit that the Office Action is instead indulging in impermissible hindsight by merely picking and choosing elements from the prior art while using the instant specification as the guide for that selection process. The Office Action goes so far as to exclude required elements from each of the cited references, clearly rendering each of the cited references unfit for their intended purpose.

Applicants further respectfully submit that merely because the references can be combined is not enough, there must still be a suggestion. MPEP 2143.01 (section citing Mills). US 181 is directed to packaging films having improved sticking properties. US 048 is directed to norbornenyl-modified flame retardant resins for use as durable items, such as bathtubs, toilets, car bumpers and the like. US 626 is directed to paper-machine cloth having improved hydrolytic stability. Applicants respectfully submit that these are altogether different fields of endeavor and problems solved, to say the least.

However, even if combined (which Applicants submit should not be done), the claimed invention would not result. The impetus of US 181 is the incorporation of EN in packaging films. The impetus of US 626 is improved hydrolytic stability within PEN monofilament. US 048 is directed to durable items incorporating norbornenyl-modified flame retardant polymers.

Application No.: 09/757,721
Filing Date: January 10, 2001
Page: 13

Consequently, even if combined, the recited flame-retardant films comprising a single thermoplastic composition consisting of polyethylene terephthalate and/or polybutylene terephthalate and whose flame retardancy is imparted entirely by flame retardant consisting of one or more organic phosphorous compounds would not have resulted.

And the combination most certainly would not have resulted in such films having a thickness between 5 to 300 μm which further meets the requirements of UL 94 VTM-0. As noted by the Examiner, films of the recited thickness are known. Various flame retardants are known as well. Nevertheless, it was altogether unexpected that polyester films having the recited thickness, i.e. a thickness as low as 5 μm , could incorporate organic phosphorous compounds alone to provide sufficient flame retardancy to meet UL 94 VTM-0. In fact, there would have been no reasonable expectation of the recited successful flame retardancy of organic phosphorous compounds alone based on the teachings of US 048. (MPEP 2143.02 in conjunction with US 048 at Col. 52, lines 49 – 51 and Col. 38, lines 45 – 50 and Col. 53, lines 1 – 25, Table 3, indicating that a mixture of flame retardants, including US 048's particular norbornenyl-based flame retardant resin, is required for the resulting articles to satisfy the UL 94 flame retardance standard).

Nor would the combination have resulted in films having a multi-layered construction that includes flame retardant and hydrolysis stabilizer in the base layer alone and that further complies with the conditions of UL 94 as recited in Claim 22.

Accordingly, Applicants respectfully submit that Claims 1, 2 and 5 through 22 are patentable in light of US 181, US 626 and US 048, considered either alone or in combination.

Claims 5 and 13 are similarly patentable in light of the foregoing references in combination with DE 599.

Application No.: 09/757,721
Filing Date: January 10, 2001
Page: 14

DE 599 is directed to the incorporation of UV stabilizer and one or more antioxidants into cast sheet to avoid yellowing in outdoor applications. The cast sheet ranges in total thickness from about 0.8 to 20 millimeter. The working examples of DE 599 have a thickness of 4 millimeter.

The cast films of DE 599 may have either a multilayer or monolayer construction. DE 599 indicates that its antioxidant may be found within any of the layers of its films.

Applicants respectfully reiterate that DE 599 does not teach or suggest the recited biaxially oriented film. DE 599, directed to sheet having a minimum thickness of 0.8 millimeter, thus most certainly does not teach or suggest the recited biaxially oriented films ranging in thickness from 5 to 300 microns.

Nor does DE 599 teach or suggest the recited one flame retardant(s) consisting of one or more organic phosphorous compounds or biaxially oriented films incorporating such organic phosphorous compounds that further meet the requirements of UL 94 VTM-0.

Applicants thus respectfully submit that the claimed invention is patentable in light of DE 599, considered either alone or in combination with the art of record.

Applicants likewise respectfully reiterate that there would have been no motivation to have combined US 181, US 048, US 626 and DE 599. As noted above, US 181 is directed to packaging films having improved sticking properties. US 048 is directed to norbornenyl-modified flame retardant resins for use in durable items, such as bathtubs, toilets, car bumpers and the like. US 626 is directed to paper-machine cloth having improved hydrolytic stability. DE 599 is directed to cast sheet including antioxidants. Applicants respectfully submit that these are altogether different fields of endeavour and problems solved, to say the least.

Application No.: 09/757,721
Filing Date: January 10, 2001
Page: 15

However, even if combined (which Applicants submit should not be done), the claimed invention would not result. US 181 requires EN. US 626 similarly requires PEN compositions. US 048 requires norbornenyl-modified flame retardants. DE 599 is directed to cast sheet.

Consequently, even if combined, the recited flame-retardant films comprising a single thermoplastic composition consisting of polyethylene terephthalate and/or polybutylene terephthalate and whose flame retardancy is imparted entirely by flame retardant consisting of one or more organic phosphorous compounds would not have resulted. And the combination most certainly would not have resulted in such films having a thickness between 5 to 300 μm which further meets the requirements of UL 94 VTM-0.

Accordingly, such films further including the enumerated hydrolysis stabilizers of Claim 5 would not result. Likewise, the films of Claim 13, incorporating recycled material, would not result.

Applicants thus respectfully submit that Claims 5 and 13 are patentable in light of US 181, US 048, US 626 and DE 599, considered either alone or in combination.

CONCLUSION

It is respectfully submitted that Applicants have made a significant and important contribution to the art, which is neither disclosed nor suggested in the art. It is believed that all of pending Claims 1, 2 and 5 through 22 are now in condition for immediate allowance. It is requested that the Examiner telephone the undersigned if any questions remain to expedite examination of this application.

It is not believed that extensions of time or fees are required, beyond those which may otherwise be provided for in documents accompanying this paper. However, in the

Application No.: 09/757,721
Filing Date: January 10, 2001
Page: 16

event that additional extensions of time and/or fees are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required is hereby authorized to be charged to Deposit Account No. 50-2193.

Respectfully submitted,



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